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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,204	09/08/2003	Hidetoshi Nojiri	03500.017148.	7504
5514	7590	09/13/2005		
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER GLEITZ, RYAN M	
			ART UNIT 2852	PAPER NUMBER
DATE MAILED: 09/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/656,204

Applicant(s)

NOJIRI, HIDETOSHI

Examiner

Ryan Gleitz

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-14 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-9,11-14 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-9, and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolodziej (U.S. 6,585,344).

Kolodziej discloses a recording medium residual amount detecting device for detecting information concerning a residual amount or remaining number stacked of recording medium.

Figures 6 and 7 illustrate an external force applying means (702) that applies an external force to a recording medium group in a thickness direction thereof; and external force detector (704) that detects the external force applied to the recording medium group, wherein the external force detector (704) is disposed such that the recording medium group is set in a position between the external force applying means (702) and the external force detector (704). See col. 7, lines 1-17.

Figure 6 illustrates that the external force applying means can also be a capacitive type sensor with generates a voltage and measures the response, indicating a capacitance of the stack of media. Col. 6, lines 48-66.

A DC voltage renders a capacitor to operate like an open circuit. Therefore, capacitors must use an AC voltage. An AC voltage must have a predetermined frequency.

Regarding claim 3, the external force applying means and the external force detector are composed of a first electrode (602) capable of being in contact with a front surface of the recording medium group and a second electrode (604) capable of being in contact with a rear surface of the recording medium group, and wherein the recording medium residual amount detecting device further comprises voltage applying means that applies a voltage between the first electrode (602) and the second electrode (604). See col. 4, lines 44-66.

Regarding claim 4, in step 806 of the flow diagram shown in figure 8, the information concerning a residual amount of recording medium is detected by comparing a signal stored in advance in a storage circuit corresponding to a residual amount, with a signal detected by the external force detector. See. Col. 7, lines 32-43.

Regarding claim 6, step 810 generates a notification, which is a warning means that issues, when the remaining number of the recording medium is equal to or less than a predetermined value, a warning indicating that the remaining number is equal to or less than the predetermined value. See col. 7, lines 41-45.

Regarding claim 7, paper tray (302) is a recording medium stacking means for stacking a recording medium group.

Regarding claims 8-9, 11, and 12, the notification is generated and sent to a user via a network as shown by figure 9, which inherently involves outputting information as electronic information to a display of a computer connected with the image forming apparatus. See col. 7, lines 44-47, and col. 7, line 57 - col. 8, line 9. If the printer has no pages left or has some number less than the number required by the requested print job, the notification is sent, which reads on irrespective of presence (not used up) or absence (used up) of the recording medium.

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Regarding claim 13 and 14, the apparatus above also reads on executing a process of the detecting device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-9, 11-14, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolodziej (U.S. 6,585,344) in view of Dyben (US 3,341,774).

Kolodziej discloses a recording medium residual amount detecting device for detecting information concerning a residual amount or remaining number stacked of recording medium.

Figures 6 and 7 illustrate an external force applying means (702) that applies an external force to a recording medium group in a thickness direction thereof; and external force detector (704) that detects the external force applied to the recording medium group, wherein the external force detector (704) is disposed such that the recording medium group is set in a position between the external force applying means (702) and the external force detector (704). See col. 7, lines 1-17.

Figure 6 illustrates that the external force applying means can also be a capacitive type sensor with generates a voltage and measures the response, indicating a capacitance of the stack of media. Col. 6, lines 48-66.

Regarding claim 3, the external force applying means and the external force detector are composed of a first electrode (602) capable of being in contact with a front surface of the

recording medium group and a second electrode (604) capable of being in contact with a rear surface of the recording medium group, and wherein the recording medium residual amount detecting device further comprises voltage applying means that applies a voltage between the first electrode (602) and the second electrode (604). See col. 4, lines 44-66.

Regarding claim 4, in step 806 of the flow diagram shown in figure 8, the information concerning a residual amount of recording medium is detected by comparing a signal stored in advance in a storage circuit corresponding to a residual amount, with a signal detected by the external force detector. See. Col. 7, lines 32-43.

Regarding claim 6, step 810 generates a notification, which is a warning means that issues, when the remaining number of the recording medium is equal to or less than a predetermined value, a warning indicating that the remaining number is equal to or less than the predetermined value. See col. 7, lines 41-45.

Regarding claim 7, paper tray (302) is a recording medium stacking means for stacking a recording medium group.

Regarding claims 8-9, 11, and 12, the notification is generated and sent to a user via a network as shown by figure 9, which inherently involves outputting information as electronic information to a display of a computer connected with the image forming apparatus. See col. 7, lines 44-47, and col. 7, line 57 - col. 8, line 9. If the printer has no pages left or has some number less than the number required by the requested print job, the notification is sent, which reads on irrespective of presence (not used up) or absence (used up) of the recording medium.

Regarding claim 13 and 14, the apparatus above also reads on executing a process of the detecting device.

Kolodziej teaches a capacitive type sensor using an AC voltage and declares the theories under which capacitive systems such as the one described above work are known, but does not expressly disclose at what frequency the capacitive sensor operates. Col. 6, lines 48-66.

However, Dyben discloses a capacitive type sensor for detecting sheets that run, for example, at 20kHz, which reads on the claimed range of several kHz to 500 kHz. Col. 3, line 10.

It would have been obvious to one of ordinary skill in the art at the time the invention was made that the frequency used by the capacitive sensor of Kolodziej would use a frequency within the claimed range based on the teaching by Dyben that 20 kHz is an appropriate frequency for detecting sheet material.

Response to Arguments

Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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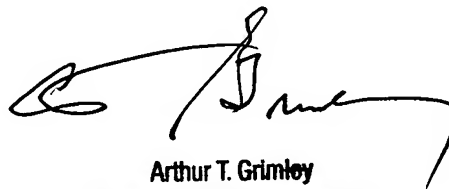
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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